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OBJECTIVES: Paediatric advisory guidelines recommend prophylaxis against respiratory syncytial virus (RSV) for infants with hemodynamically significant congenital heart disease (HSCHD). However, current recommendations have cast doubt as to whether prophylaxis is beneficial after 1year of age. The objective of this study is to determine whether there are differences in RSV-related hospitalizations (RSVH) in HSCHD infants receiving palivizumab during the first versus second season in the Canadian Registry of palivizumab (CARESS) database. **METHODS:** CARESS is a prospective registry of infants who have received ≥1 dose of palivizumab at one of 32 sites across Canada during the 2005-2014 RSV seasons. Demographic data were collected at enrollment and respiratory-illness-related hospitalization events were recorded monthly. Only infants aged <24 months with HSCHD were included in the analysis. **RESULTS:** 707 (35.1%) of 2013 infants were prophylaxed during the second season (average age in months: 4.7 [first season] vs 14.7 [second season]). There were no significant differences between first- and second-season infants in terms of baseline demographics. However, infants aged >1year had a more complicated neonatal course, with significantly longer neonatal length of stay (46.7 versus 25.6 days). 26 infants in the first year (RSVH rate: 2.26%) and 11 infants in the second year of prophylaxis (RSVH rate: 2.09%) were hospitalized. A Cox regression found that there were neither significant differences in hazards between infants in their first or second year of prophylaxis in terms of time to first RSVH nor relevant predictors of the neonatal course. **CONCLUSIONS:** Infants enrolled in the CARESS database in the second RSV season had a similar hazard of RSVH as those in the first year of life. These findings suggest that infants aged >1 year are equally at risk for RSVH and benefit from palivizumab prophylaxis.

PIN30

DETERMINANTS OF PERTUSSIS OUTBREAKS AND LESSONS LEARNT

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OBJECTIVES: Pertussis (whooping cough) is an acute, highly contagious infectious disease, causing uncontrollable and severe coughing. Pertussis outbreaks are increasingly common, but little is available on their determinants. Through a systematic literature review, this study aims at describing key drivers of pertussis outbreaks, and at listing reported recommendations. **METHODS:** A systematic review of literature on pertussis outbreaks was conducted, including references published between 2011 and 2014, using Medline, Embase, the Cochrane library and relevant websites as potential sources. All population-based studies reporting information about epidemiology, burden or costs of pertussis outbreaks were included, without geographical restriction. **RESULTS:** Thirty-eight observational studies from 14 countries were included. Three different kinds of key drivers were identified by authors. Disease-related drivers included delays occurring in diagnosis and isolation of cases, natural cyclic variations and possible pathogen-specific changes. Healthcare management-related drivers included differences in physician awareness and/or underuse of laboratory diagnosis method. Finally booster-related drivers included low vaccination coverage and waning vaccine-mediated immunity. Most studies attempted to provide recommendations. The need for vaccination campaigns was clearly stated in several studies, such as new vaccination strategies (vaccination of adults, maternal immunisation, earlier booster dose, cocooning strategy, etc.) or more generally availability of vaccines providing long-lasting immunity. Systematic laboratory confirmations and systematic reporting were also suggested to reduce the burden of pertussis. **CONCLUSIONS:** These results highlight the need to improve monitoring the epidemiology of pertussis, areas for improvement for pertussis healthcare management and the need to have boosters with optimal timing within the routine immunisation schedule. Additional research is to be carried out to support health authorities in the choice of the most adapted national vaccination programme.

PIN31

SURVIVAL ANALYSIS OF HIV AND AIDS TREATMENT IN KENYA

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OBJECTIVES: HIV and AIDS is a major cause of premature death and impose a large socioeconomic burden in Kenya. Antiretroviral treatment (ART) is one of the interventions being implemented to mitigate these impacts. Studies on the survival rate and the socioeconomic factors explaining survival of patients on treatment follow up are very rare in Kenya. The objective of this research was to estimate the survival rate and factors associated with survival of the HIV positive patients on ART and those not on ART. **METHODS:** Baseline characteristic of adults on ART and those not on ART with CD4 counts 250 and below at enrolment were collected from the patient charts between 2003 to 2010, from Mbagathi District Hospital (Mbagathi) (n=300) and Moi Teaching and Referral Hospital (Moi) in Kenya (n=400). Kaplan Meier and life table analysis were used and survival durations measured in 3 monthly intervals. **RESULTS:** The survival rate declined over time. Approximately 3% of the patients died within the first three months of treatment debut and 57% were still alive at the time of this study (after 78 months of follow up). 25% of the patients in Mbagathi died by the 11th cycle (33 months) (95% CI[7-15]) where as 25% of patients in Moi died by the 16th cycle (48 months) (95% CI[14-19]). In addition, after the initial 30 months of treatment follow up 77%, (95% CI[71.7-81.3%]) of patient enrolled in Mbagathi and 91.9%, (95% CI[88.5-94.3%]) enrolled in Moi were still alive, showing better survival rate of patients in Moi. The patients on ARVs were likely to survive longer than those not on ART, the female and married patients were also likely to survive longer than their male and unmarried counterparts. **CONCLUSIONS:** The study findings shows that ART increases the survival rates, being female and married are also associated with increased survival rates.

INFECTION – Cost Studies

PIN32

USE OF ORITAVANCIN FOR THE TREATMENT OF SKIN AND SOFT TISSUE INFECTIONS: A UK HOSPITAL BUDGET IMPACT ANALYSIS

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OBJECTIVES: Approximately 250,000 patients per year are admitted to hospitals in the United Kingdom (UK) with skin and soft tissue (SSTI) infections, accounting for ~1.6% of hospital admissions. Staphylococcus aureus accounts for >50% of SSTIs; methicillin-resistant Staphylococcus aureus(MRSA) infections represent approximately 13.7% of those. Treatment of SSTIs is costly and often involves intravenous (IV) antibiotic therapy, hospitalization of ≥10 days and may involve both inpatient stay and multi-day follow-up outpatient antibiotic parenteral therapy (OPAT). Hospitals and healthcare systems may reduce the economic burden of hospitalized patients through the use of OPAT and/or early hospital discharge. Oritavancin is a single, once only 1200 mg IV dose for the treatment of SSTIs caused by gram positive bacteria, including MRSA. The aim of this analysis was to quantify the annual economic impact to a UK hospital of using oritavancin in select moderate-to-severe SSTI patients. **METHODS:** A decision tree based on current clinical practice was constructed to estimate the economic value of using oritavancin. Current and future utilization of antibiotics were informed by published literature and clinical expert opinion. Clinical data were derived from the literature and oritavancin's pivotal phase III studies. Drug costs were derived from the British National Formulary. Other included costs were based on the UK 2014 NHS reference costs. **RESULTS:** For a UK hospital treating 100 SSTI patients per year eligible for IV antibiotics, using oritavancin conservatively (3.6% of patients) would decrease total annual cost by £2,922.52. Increased pharmaceutical costs (£6,111.21) were offset by reductions in drug administration costs (-£5,531.13) and hospitalization/OPAT costs (-£3,379.48). Inpatient and outpatient days of treatment were reduced by 8.2 and 16.4 days, respectively. **CONCLUSIONS:** Using oritavancin conservatively in moderate-to-severe SSTI patients is estimated to reduce costs by £29.23/patient by shifting patient care to the outpatient setting, allowing for early discharge, and reducing hospitalization and drug administration costs.

PIN33

A COST-EFFECTIVENESS AND BUDGET IMPACT ANALYSIS OF FIDAXOMICIN FOR TREATING CLOSTRIDIUM DIFFICILE PATIENTS IN GERMANY

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OBJECTIVES: Clostridium difficile infection (CDI) is a debilitating illness. In two phase III trials fidaxomicin produced comparable initial cure rates, significantly lower recurrence rates ($p<0.005$) and significantly higher sustained cure rates ($p=0.001$) versus vancomycin. This cost-effectiveness and budget impact model analysed the costs and outcomes of vancomycin and fidaxomicin for treatment of CDI in Germany. **METHODS:** The model was a Markov cohort simulation, with 10-day cycle length. The analysis timescale was either 40 days (hospital perspective) or 1 year (payer perspective). Clinical inputs included : 30-day CDI-attributable mortality, probability of clinical cure and 30-day probability of recurrence after end of treatment. The first-line treatment is either Dificlir (€1300) or vancomycin (€61). Second line treatment is user defined, and in the base case is vancomycin. Third line treatment is a rescue treatment (€1500), assumed to have 100% cure rate. The model is populated with cost data for Germany. Drug costs are based on list prices, and the costs of hospitalisation are DRG tariff rates; Cost per day of CDI treated on a general ward (€348). A deterministic sensitivity analysis was carried out to test the robustness of the model outcomes. The cost-effectiveness of six CDI patient subgroups was also analysed based on the two fidaxomicin clinical trials' results. **RESULTS:** The outcomes of the model for All Patient group: incremental cost per QALY gained €40,807, cost per recurrence avoided €2,068, and cost per bed-day saved €110. For the All Patient group fidaxomicin reduced the number of recurrences by 49%. Fewer recurrences led to a reduction in attributable deaths, a gain in life years; an improvement in quality of life; and a reduction in the number of bed-days. **CONCLUSIONS:** First-line fidaxomicin is likely to be a cost-effective treatment option, compared to vancomycin at a willingness to pay threshold of €50,000 per QALY gained.

PIN34

COST-UTILITY ANALYSIS OF THREE TYPES OF INFLUENZA VACCINES (TRIVALENT, TRIVALENT HIGH DOSE AND QUADRIVALENT) IN ADULTS AGED 65 AND OLDER UNDER UNIVERSAL INFLUENZA IMMUNIZATION PROGRAM (UIIP) IN ONTARIO, CANADA

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OBJECTIVES: This research aims to assess the economic impact and cost-utility of replacing trivalent inactivated influenza vaccines (IIV3) with the newer influenza vaccines – trivalent high dose (HD) or quadrivalent (IIV4) influenza vaccine in adults aged 65 and older under Ontario's Universal Influenza Immunization Program (UIIP) from healthcare and societal perspectives. **METHODS:** An analytical decision model was developed for the elderly (age 65-74, 75-84, and 85 and above) at two levels of health risks (high and low) with influenza-related health outcomes from Ontario or Canada. Ontario's demographic data and labor costs were extracted from Statistics Canada. Vaccine efficacies were based on post-marketing clinical study for HD and estimated from published literatures for IIV4. Antiviral treatment and over-the-counter medication costs were considered. Deterministic (DSA) and probabilistic sensitivity analyses (PSA) were conducted. Additional analysis was performed for long-term impact of influenza infections. **RESULTS:** Comparing to IIV3 under UIIP, IIV3 HD has a net societal budget impact of C$346,809 including premature deaths in a single influenza season. The incremental cost-effectiveness ratio (ICER) is C$3,763 per QALY gained from healthcare perspective and C$190 per QALY gained from